



**VERIZON VIRGINIA INC. PANEL TESTIMONY ON
UNBUNDLED NETWORK ELEMENTS AND
INTERCONNECTION COSTS**

1 **XI. OSS**
2 **(JDPL ISSUES II-1 to II-1-d; II-2-c-d; IV-30; IV-36)**

3 **A. INTRODUCTION TO STUDY AND SUMMARY OF**
4 **COSTS**

5 **Q. What does this section of testimony address?**

6 A. This section of testimony describes the methodology that Verizon VA has
7 used to identify the costs Verizon VA has incurred and will continue to incur
8 in making its OSS available to CLECs and resellers.

10 **Q. Please define the Access to OSS unbundled network element.**

11 A. The Access to OSS unbundled network element is defined by the
12 Commission as consisting of access to five operations support system
13 functions: (1) pre-ordering, (2) ordering, (3) provisioning, (4) maintenance
14 and repair, and (5) billing.

16 **Q. Please provide a brief overview of the types of OSS costs that are related**
17 **to the Access to OSS UNE?**

18 A. There are two primary categories of OSS costs that Verizon VA has incurred
19 or will continue to incur in making Verizon VA's OSS available to CLECs:
20 (1) initial development costs to make such access to Verizon VA's operations
21 support systems possible; and (2) the associated recurring capital costs and
22 ongoing maintenance expenses associated with provisioning OSS Access on

**VERIZON VIRGINIA INC. PANEL TESTIMONY ON
UNBUNDLED NETWORK ELEMENTS AND
INTERCONNECTION COSTS**

1 an ongoing basis. This testimony presents both of these costs and proposes a
2 methodology for recovering these costs.

3

4 **Q. Does Verizon have other OSS costs that are not included in the Access to**
5 **OSS charges?**

6 A. Yes. Verizon also incurred and will continue to incur costs in connection
7 with the development and ongoing provision of OSS associated with
8 provisioning certain specific UNEs or services required by the Commission
9 under the Telecommunications Act. For example, the company was required
10 to develop special software to provision line sharing and dark fiber.

11 When the development and maintenance cost associated with OSS is
12 specific to a particular UNE or related service or product, the cost is included
13 in the total UNE cost for that element. The Access to OSS UNE rate
14 recovers only the costs Verizon incurs for the specific OSS functionalities
15 and interfaces that permit CLECs general access to Verizon's systems.

16

17 **Q. What do you mean when you refer to Access to OSS developmental**
18 **costs?**

19 A. OSS developmental costs are the costs to modify Verizon VA's pre-existing
20 systems and develop new systems and interfaces necessary to provide
21 competitors with access to Verizon VA's OSS. The OSS modifications were

**VERIZON VIRGINIA INC. PANEL TESTIMONY ON
UNBUNDLED NETWORK ELEMENTS AND
INTERCONNECTION COSTS**

1 developed through extensive collaborative efforts among various commission
2 regulatory staffs, Verizon, and its competitors.

3

4 **Q. Do any of the costs presented in this testimony include the costs of OSS**
5 **that are used for providing Verizon retail services?**

6 A. No. All of the costs presented in this testimony reflect the OSS costs Verizon
7 incurs to provide wholesale products to CLECs and resellers.

8

9 **Q. Are any of the costs identified in this testimony associated with**
10 **improving Verizon's systems for its own use?**

11 A. No. The costs identified here relate only to developing or modifying systems
12 to facilitate access to Verizon's OSS by other carriers. None of the costs
13 identified here were for improving the basic functioning of the OSS for
14 Verizon VA's use.

15

16 **Q. Please describe how the Access to OSS cost study is organized.**

17 A. The study consists of two sections and is located in VZ-VA CS, Vol. VIII,
18 Part F-5. Part F-5, Workpaper 4, Page 1-12 presents the development and
19 ongoing costs of OSS access. Part F-5, Workpaper 4, Page 13 provides the
20 demand forecasts that form the basis of Verizon VA's cost recovery proposal.

21

**VERIZON VIRGINIA INC. PANEL TESTIMONY ON
UNBUNDLED NETWORK ELEMENTS AND
INTERCONNECTION COSTS**

1 **Q. Please summarize the costs Verizon VA has incurred and continues to**
2 **incur to provide the CLECs access to its OSS.**

3 A. As noted, there are initial development costs and recurring maintenance and
4 capital costs. Verizon VA has identified \$227 million for the entire Verizon
5 East footprint in initial development costs that are applicable to Verizon
6 East – South. Verizon VA has also identified approximately \$50 million in
7 ongoing recurring costs.

8

9 **Q. How did Verizon VA determine how to allocate these costs across the**
10 **footprint?**

11 A. Although Verizon VA's share of the initial development costs and ongoing
12 recurring costs based on existing access lines is approximately \$22.7 million
13 and \$4.9 million, respectively, Verizon VA instead proposes to recover the
14 total costs through monthly recurring charges to CLECs that are based on the
15 number of UNE loops, platform/combinations and resold lines that are
16 forecasted to be in service in Virginia in the 10-year forecast period described
17 below. Verizon VA's proposed rate structure is presented in the workpapers
18 in Part F-5 of the cost studies. See VZ-VA CS, Vol. VIII, Part F-5.

19

20 **Q. How was Virginia's share of the costs of providing access to OSS**
21 **determined?**

**VERIZON VIRGINIA INC. PANEL TESTIMONY ON
UNBUNDLED NETWORK ELEMENTS AND
INTERCONNECTION COSTS**

1 A. The total relevant regional costs associated with providing access to OSS
2 were attributed to Virginia by dividing access lines in service as of December
3 31, 2000 for Virginia versus Verizon East – South and Verizon East as
4 appropriate. However, as will be explained later in this testimony, under
5 Verizon’s proposed rate structure, Virginia CLECs will only be responsible
6 for their fair share of such costs based on the projected demand of UNE
7 loops, platforms/combinations and resold lines. This projected demand came
8 from a forecast of demand for resold lines and UNE loops and platform
9 combinations for Virginia, Verizon East – South, and all of Verizon East,
10 provided by Verizon’s wholesale marketing organization.

11

12 **Q. Why did Verizon VA include regional OSS costs in its cost studies**
13 **presented here?**

14 A. In general, OSS costs were not and will not be incurred on a state-specific
15 basis. Many of the costs for OSS access were incurred as part of region-wide
16 (either throughout Verizon East or throughout Verizon – East South)
17 development of interfaces and modification of OSS. This development was
18 necessary for CLECs in Virginia to obtain OSS access, and Verizon VA
19 accordingly is attributing a fair share of these regional costs to Virginia.
20 Likewise, because OSS typically will be maintained on a regional basis as
21 well, those costs must be allocated to the states that benefit.

**VERIZON VIRGINIA INC. PANEL TESTIMONY ON
UNBUNDLED NETWORK ELEMENTS AND
INTERCONNECTION COSTS**

1

2 **Q. How did Verizon VA calculate OSS development costs?**

3 A. The development costs are based on actual costs that Verizon has already
4 incurred, and were then projected forward using productivity and inflation
5 adjustments. Verizon VA's cost study presents actual expenses through the
6 period ending December 31, 1999. Ongoing costs are developed using
7 factors applied to capital investment and development costs. Verizon VA
8 addresses these cost identification methods later in this testimony.

9

10 **Q. Are the development costs of Access to OSS forward-looking?**

11 A. Yes, they are. Although the development activity has already taken place, the
12 costs were forward-looking at the time they were incurred and represent costs
13 incurred to undertake the new, incremental operation of providing resellers
14 and UNE purchasers state-of-the art access to Verizon's OSS. The mere fact
15 that dollars already were expended does not change the fact that the costs at
16 issue were incurred after, and as a direct result of, the Telecommunications
17 Act's decree that Verizon develop and install forward-looking advanced OSS
18 capabilities for use by other telecommunications carriers. Unlike historical
19 costs for "embedded" technology and equipment, the OSS development costs
20 were incurred specifically to satisfy the Telecommunication Act's
21 requirements and permit CLECs to obtain UNEs and resale in an efficient

**VERIZON VIRGINIA INC. PANEL TESTIMONY ON
UNBUNDLED NETWORK ELEMENTS AND
INTERCONNECTION COSTS**

1 manner. The costs have no relation to any of Verizon's historic business
2 activities. The mere fact that Verizon initiated the work before obtaining the
3 approval of the specific rates proposed to recover the costs means only that
4 real, rather than estimated, costs can be used in assessing the costs to be
5 recovered.

6 The same is true with respect to the ongoing enhancements Verizon
7 makes to its systems. The requirements for interfaces and gateway systems
8 have changed as a direct result of the national standards bodies' commitment
9 to semiannual "releases" of new standards, and Verizon has continually
10 upgraded its systems capability to satisfy these standards

11 Finally, Verizon VA's Access to OSS proposed costs are conservative
12 because Verizon VA looked at 1999 costs and projected those concrete costs
13 into the future, thereby providing competitors with the benefit of any
14 productivity gains that outpaced inflation. This adjustment is discussed
15 further below.

16
17 **Q. Are the costs reflected in your study incremental?**

18 A. Yes, they are. As mentioned above, the costs reflected in the study represent
19 the costs for an entirely new type of operation: providing OSS Access. The
20 costs identified in the Access to OSS study are incremental because they are

**VERIZON VIRGINIA INC. PANEL TESTIMONY ON
UNBUNDLED NETWORK ELEMENTS AND
INTERCONNECTION COSTS**

1 incurred solely to provide the functionalities and interfaces necessary for
2 reseller and UNE purchasers access to Verizon VA's OSS.

3

4 **Q. Is Verizon VA's cost study based on the use of the most efficient**
5 **technology available?**

6 A. Yes. Access to Verizon VA's OSS has been made available through new
7 processes and/or changes to existing systems, using the most efficient
8 technology currently available that can support the operations of a local
9 exchange carrier of Verizon's size and scope. For example, for provisioning
10 and trouble administration, the Verizon OSS are primarily products
11 developed by Telcordia (formerly Bellcore) and Lucent Technologies.
12 Verizon also developed several OSS interfaces and gateways primarily "in
13 house," utilizing state-of-the-art programming techniques.

14

15 **Q. Why do you say that the systems Verizon VA developed still represent**
16 **the state-of-the-art in terms of computer systems network architecture?**

17 A. The system architecture Verizon actually used reflects the expert judgment of
18 Verizon personnel and contracted vendors experienced in current
19 programming methods and software. Indeed, both WorldCom and AT&T
20 have utilized the system architecture reflected in Verizon VA's study as part
21 of the non-recurring cost model that they have introduced in regulatory

**VERIZON VIRGINIA INC. PANEL TESTIMONY ON
UNBUNDLED NETWORK ELEMENTS AND
INTERCONNECTION COSTS**

1 proceedings in several states. Both WorldCom and AT&T have represented
2 their model as representing efficient, forward-looking costs, so they should
3 have no reasonable basis for asserting otherwise in this proceeding.

4
5 **B. ACCESS TO OSS COST RECOVERY AND RATE**
6 **STRUCTURE**

7 **1. Overview**

8 **Q. How does Verizon VA propose to allocate the costs of providing access to**
9 **its OSS across the region?**

10 **A.** Verizon VA proposes that the core OSS development costs incurred in 1996
11 and 1997 in either region (Verizon East – North or Verizon East – South) be
12 assigned to that region. Verizon VA proposes that all OSS development
13 work beginning in January 1998 for interfaces and core systems be shared
14 among all the Verizon East jurisdictions. Finally, the Access to OSS Cost
15 Study includes the region-wide interface and gateway system costs for the
16 1996-1999 study period, as well as the ongoing maintenance costs, and these
17 should also be shared among the Verizon East jurisdictions.

18
19 **Q. Please explain the difference between core OSS development costs, and**
20 **development costs related to interface and gateway systems.**

21 **A.** “Core systems” refer to those systems that perform the actual pre-ordering,
22 ordering, provisioning, billing, and maintenance/repair functions. Core OSS

**VERIZON VIRGINIA INC. PANEL TESTIMONY ON
UNBUNDLED NETWORK ELEMENTS AND
INTERCONNECTION COSTS**

1 development costs refer to the costs incurred by Verizon to modify the core
2 systems to enable CLECs to obtain access to use those systems. The
3 interface and gateway systems, on the other hand, act as “middleware”
4 between the CLEC and Verizon VA’s core OSS. The interface and gateway
5 systems allow CLECs to access Verizon’s underlying core OSS.

6

7 **2. Rate Structure**

8 **Q. What rate structure does Verizon propose for the recovery of the initial**
9 **developmental costs associated with access to Verizon VA’s OSS?**

10 A. Verizon VA proposes to recover these initial development costs over a 10-
11 year period through a monthly recurring charge for resellers and UNE
12 purchasers based on their share of the forecasted number of UNE loops,
13 platform/combinations and resold lines in service.

14

15 **Q. Why is Verizon VA’s proposed rate structure appropriate?**

16 A. Verizon VA has attempted to spread the costs of accessing its OSS
17 reasonably, using a straightforward approach based on the forecasted number
18 of lines to be serviced by the resellers and UNE purchasers. Basing the rate
19 calculation on the total number of UNE loops, platform/combinations and
20 resold lines that are forecasted to be in service permits Verizon VA to recover

**VERIZON VIRGINIA INC. PANEL TESTIMONY ON
UNBUNDLED NETWORK ELEMENTS AND
INTERCONNECTION COSTS**

1 costs based on each reseller's and UNE purchaser's use of Verizon East's
2 OSS.

3
4 **Q. Why did Verizon VA choose a 10-year recovery period?**

5 A. In other jurisdictions, some concern was expressed that a shorter recovery
6 period would disadvantage early entrants. Although Verizon VA does not
7 necessarily agree with that position, it has nonetheless proposed a 10-year
8 recovery period beginning in 2001, in order to mitigate the impact on
9 competing carriers and spread the costs among a relatively large number of
10 CLECs.

11
12 **Q. Is the recovery of the initial development costs from the CLECs and
13 resellers over time consistent with general rate-making principles?**

14 A. Yes. It is a widespread practice to take initial product development,
15 introduction and implementation costs for any new product or service and
16 recover those costs from the forecasted demand for that new product or
17 service over a specified period of time.

18
19 **Q. How does Verizon VA propose to recover the ongoing costs?**

**VERIZON VIRGINIA INC. PANEL TESTIMONY ON
UNBUNDLED NETWORK ELEMENTS AND
INTERCONNECTION COSTS**

1 A. Verizon VA proposes to recover ongoing costs in the same fashion as the
2 development cost, on a monthly per resold line/UNE loop/UNE platform or
3 combination basis.

4

5 **3. Forecasts**

6 **Q. What role do forecasts play in determining the appropriate rates?**

7 A. In order to determine the appropriate rates, Verizon VA must forecast the
8 number of UNE loops, platform/combinations and resold lines that will be in
9 service between now and 2010. The OSS development costs described above
10 are then divided by the levelized demand forecast to develop the appropriate
11 per-unit rates.

12

13 **Q. Please describe the forecasts used to develop the per UNE loop,**
14 **platform/combination and resold line charges.**

15 A. Verizon VA used the latest available forecast, which covers the period 2001-
16 2005, from Verizon VA's wholesale marketing organization
17 (Telecommunications Industry Services) for UNE loops,
18 platform/combinations and resold lines. This forecast considers differing
19 trends in the various states based upon regulatory factors, product
20 availability, competitive climate, and forecasts provided by CLECs to the
21 marketing organization. After gathering this information, Verizon VA

**VERIZON VIRGINIA INC. PANEL TESTIMONY ON
UNBUNDLED NETWORK ELEMENTS AND
INTERCONNECTION COSTS**

1 analyzed these inputs and the history of actual demand to create a market
2 forecast. Finally, demand for years 2006-2010 was projected from the year
3 2005 demand.

4

5 **C. CHANGES MADE TO VERIZON'S OSS TO PERMIT**
6 **CLEC ACCESS TO OSS**

7 **Q. Please describe this section of the testimony.**

8 A. Above, Verizon discusses the Access to OSS Cost Study and proposed rate
9 structure. This section addresses the various changes to Verizon's OSS that
10 were required to provide CLEC access to Verizon's systems, so that the
11 Commission will understand the overwhelming magnitude of these changes
12 and the resulting costs.

13

14 **Q. In general, why did Verizon VA have to modify its mechanisms for**
15 **providing access to OSS?**

16 A. Verizon VA offers a multitude of different wholesale services. The ordering,
17 provisioning, maintenance and billing of each of these services are extremely
18 complex processes and require the communication of information to multiple
19 work forces and operating systems. For example, a single service order for
20 the installation of a simple access line requires (at a minimum) the
21 information needed for each of the following functions:

22 (1) Establishment of a directory listing;

**VERIZON VIRGINIA INC. PANEL TESTIMONY ON
UNBUNDLED NETWORK ELEMENTS AND
INTERCONNECTION COSTS**

- 1 (2) Switch translations for feature activation;
- 2 (3) Local outside plant facility and central office facility assignment
- 3 (frame terminations, central office line equipment, and/or switch
- 4 translations);
- 5 (4) Field installation requirements;
- 6 (5) E911 updates;
- 7 (6) Call screening updates (for example, 900 call blocking, collect call
- 8 blocking, and routing of long distance calls);
- 9 (7) Maintenance system updates; and
- 10 (8) Generation of customer billing information.

11 For retail services, these functions are, and for many years have been,

12 handled by existing systems, and therefore the requirements for information

13 to support them were established long before the 1996 Act. In the case of

14 wholesale services, however, Verizon was required to analyze and document

15 all of the requirements in order to develop hardware and software to provide

16 the CLECs with the information and ability to order products from Verizon

17 VA on a wholesale basis.

18

19 **Q. What systems are actually used to perform the five OSS functionalities?**

20 A. Verizon VA's core OSS provide the pre-ordering, ordering, provisioning,

21 maintenance and repair, and billing functionalities; the interfaces primarily

**VERIZON VIRGINIA INC. PANEL TESTIMONY ON
UNBUNDLED NETWORK ELEMENTS AND
INTERCONNECTION COSTS**

1 format, translate, and transmit information between the CLEC and Verizon
2 VA.

3

4 **1. Pre-Ordering**

5 **Q. Please explain the pre-ordering OSS function.**

6 A. Before a CLEC issues an order to Verizon, it typically obtains information
7 about the potential customer from Verizon. This information is often
8 obtained at the same time the CLEC is on the phone with the potential
9 customer.

10

11 **Q. Please describe the pre-ordering capabilities that Verizon VA has made**
12 **available to resellers and UNE purchasers.**

13 A. The pre-ordering functionalities include, among other things:
14 (1) Access to customer service records (CSRs);
15 (2) The ability to select and reserve telephone numbers while the end user
16 is on-line;
17 (3) The ability to determine the features/services that are currently
18 available in a particular central office or for a particular NXX code;
19 (4) The ability to select an order due date and determine whether
20 resources are available to schedule any outside work required while
21 the end user is on-line;

**VERIZON VIRGINIA INC. PANEL TESTIMONY ON
UNBUNDLED NETWORK ELEMENTS AND
INTERCONNECTION COSTS**

1 (5) The ability to determine that a given address is valid and properly
2 expressed; and

3 (6) The ability to view directory listings.
4

5 **Q. What Verizon VA core systems and databases provide these**
6 **functionalities?**

7 A. Verizon VA uses several different systems and databases to perform these
8 pre-ordering functions. They include, for example:

9 **Livewire** – Livewire is used to confirm that an address is a valid
10 address served by Verizon VA's network facilities and is consistent with the
11 data in Verizon VA's provisioning and billing systems. It is also used to
12 perform telephone number selection and reservation. Livewire also
13 determines order due dates and maintains an inventory of tariff features and
14 products in a given switch.

15 **Billing and Order Support System (BOSS)** – BOSS acts on CSRs,
16 which identify the services and products being provided to a customer. CSRs
17 are used for reference and service order generation.

18 **PHOENIX** – The PHOENIX system was developed to provide
19 mechanized loop qualification for ISDN.

20 **Beacon/Sober** — Provides directory listing information.

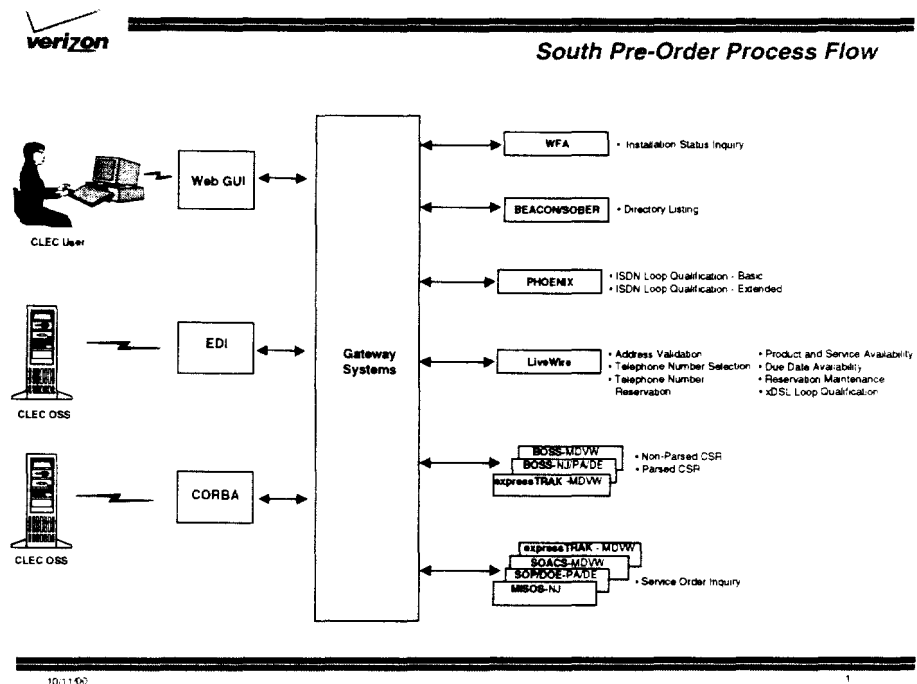
21 **Service Order Processor (SOP)** — Provides service order status.

**VERIZON VIRGINIA INC. PANEL TESTIMONY ON
UNBUNDLED NETWORK ELEMENTS AND
INTERCONNECTION COSTS**

Work Force Administration System (WFA) — Provides service installation status information.

The process for pre-ordering is summarized in Figure 3 below.

Figure 3



O. Which of these systems had to be modified in order to provide resellers and UNE purchasers with non-discriminatory access to the pre-ordering capabilities discussed above?

A. While the specific pre-ordering systems and databases described above required minor or no modifications, Verizon had to develop new (or significantly modify existing) gateway or interface systems to provide

**VERIZON VIRGINIA INC. PANEL TESTIMONY ON
UNBUNDLED NETWORK ELEMENTS AND
INTERCONNECTION COSTS**

1 multiple competitors/customers with access to those pre-ordering systems.
2 These gateway/interface systems are explained in greater detail later in this
3 testimony.

4

5 **2. Ordering**

6 **Q. Please describe the ordering process.**

7 A. The ordering process begins with the submission of a service order by the
8 CLEC, which is in turn processed into Verizon's Service Order Processor
9 (SOP). This process is complex because service orders contain a number of
10 required and optional fields/data elements defined in the Uniform Service
11 Order (USO) format. In addition, a CLEC must follow a number of
12 "business rules" to complete a service order successfully. For example, not
13 all features are available from all switches; therefore, the business rules do
14 not allow a feature to be ordered from a switch that is not capable of
15 providing the feature.

16

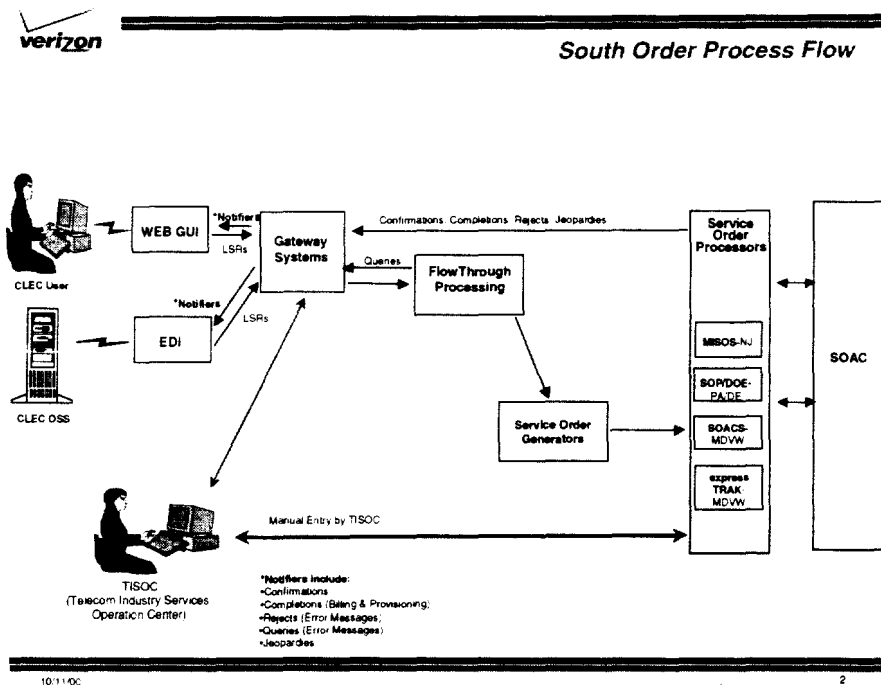
17 **Q. What systems are accessed in the ordering process?**

18 A. A CLEC may submit a service order (called a Local Service Requirement or
19 LSR) via Electronic Data Interchange (EDI) formats, the Web Graphical User
20 Interface (Web GUI), or by fax. The EDI and Web GUI interfaces are
21 described in more detail later in this testimony. Several gateway systems are

**VERIZON VIRGINIA INC. PANEL TESTIMONY ON
UNBUNDLED NETWORK ELEMENTS AND
INTERCONNECTION COSTS**

1 used to manage the LSRs received and to format them into a service order
2 format. The systems used in the ordering process are Request Manager
3 (RM), Request Broker (RB), X Service Order Generator (XSOG) and SOP.
4 RM is the gateway for the CLEC to submit an order to Verizon. RB and
5 XSOG format the order transactions into service order format. SOP accepts
6 service orders and performs a series of validations to determine if the order is
7 in the appropriate format. SOP then distributes the order to other OSS and
8 appropriate work groups so that it can be completed, and updates the status of
9 the service order based on updates from the provisioning and billing systems.
10 The ordering process is summarized in the diagram below.

Figure 4



**VERIZON VIRGINIA INC. PANEL TESTIMONY ON
UNBUNDLED NETWORK ELEMENTS AND
INTERCONNECTION COSTS**

1 **Q. Were any modifications to SOP required to enable resellers and UNE**
2 **purchasers to issue service orders?**

3 A. Yes. Significant modifications were required to enable SOP to accept,
4 identify, and process orders from resellers and UNE purchasers. Each new
5 UNE required new Uniform Service Order Codes (USOCs), which identify
6 the characteristics and acceptable processing parameters for each UNE. Each
7 USOC was loaded into SOP with the appropriate edits, processing logic
8 (example: whether a switch translation or loop product), processing flow
9 logic (example: which provisioning and billing systems required the order),
10 special handling requirements (example: CLEC notification upon
11 completion), and security.

12

13 **3. Provisioning**

14 **Q. Please describe the service order provisioning process.**

15 A. After the order is issued, it is provisioned to completion using a number of
16 different OSS. For example, the provisioning process includes a
17 determination of which facilities to assign to an order and whether a dispatch
18 of a technician is necessary. As each step in the service order provisioning
19 process is completed, status information is returned to the SOP for posting on
20 the pending service order.

21

**VERIZON VIRGINIA INC. PANEL TESTIMONY ON
UNBUNDLED NETWORK ELEMENTS AND
INTERCONNECTION COSTS**

1 **Q. Do some service orders require manual processing?**

2 A. Yes. Orders that require manual processing (primarily orders for complex
3 products, such as special services circuits or loops, ISDN, Digital Design
4 Loops (DDL), and Centrex, and orders for large jobs) are routed to the
5 appropriate work group for manual service provisioning and completion.
6 This is explained further in the non-recurring section of this testimony.

8 **Q. What systems are utilized in provisioning?**

9 A. The primary systems utilized in the provisioning process are:

10 **Service Order Analysis and Control** – Acts as the “gatekeeper” of
11 the provisioning process. SOAC analyzes each service request to determine
12 what facilities are required; issues requests to other systems to assign
13 facilities; and issues requests for switch translation updates. SOAC
14 maintains the status of each request and the assigned facilities for order
15 completion.

16 **Loop Facility Assignment and Control System (LFACS)** –
17 Inventories, maintains, and assigns loop facilities.

18 **Memory Administration Recent Change History (MARCH)** –
19 Formats the switch translations and sends them to the switch.

20 **SWITCH** – Inventories, maintains and assigns central office
21 facilities.

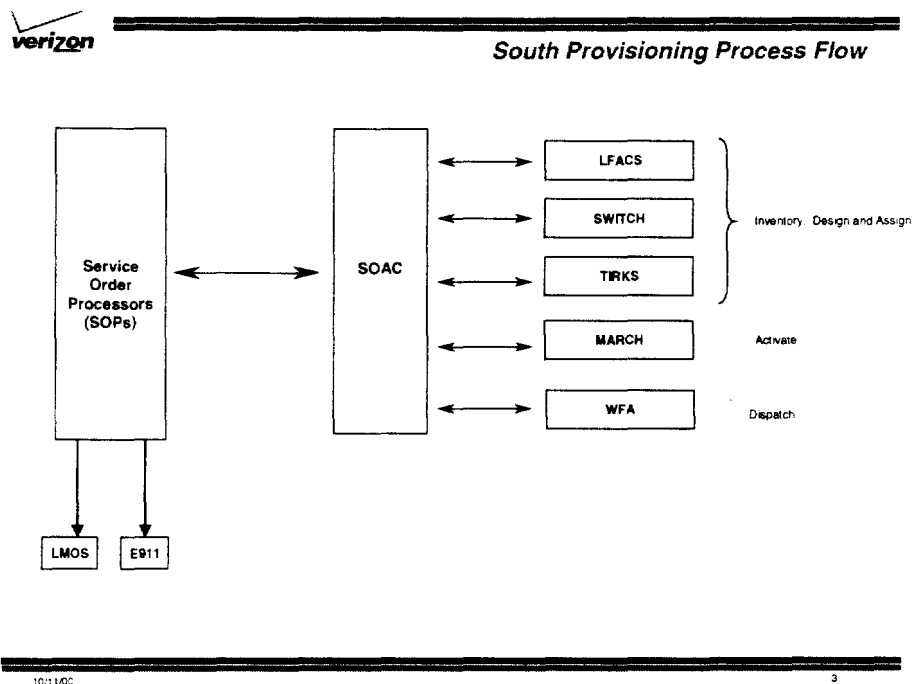
**VERIZON VIRGINIA INC. PANEL TESTIMONY ON
UNBUNDLED NETWORK ELEMENTS AND
INTERCONNECTION COSTS**

1 **Trunk Integrated Records Keeping System (TIRKS)** – Maintains
2 and assigns trunks and special services circuits.

3 **WFA** – Dispatches technicians to the field or central office.

4 The provisioning process is summarized in the diagram below.

Figure 5



- 5
- 6 **Q. What OSS modifications were made to enable Verizon VA to provision**
7 **orders placed by UNE purchasers?**
- 8 **A.**Verizon made significant modifications to the provisioning and inventory
9 processes and associated systems to enable the appropriate processing of each
10 unbundled network element. For example, each new UNE required new
11 USOCs that identify the characteristics and acceptable processing parameters.

**VERIZON VIRGINIA INC. PANEL TESTIMONY ON
UNBUNDLED NETWORK ELEMENTS AND
INTERCONNECTION COSTS**

1 Each USOC was loaded into the provisioning systems with the appropriate
2 edits, processing logic (example: whether a switch translation or loop
3 product), processing flow logic (example: could the UNE require a dispatch),
4 special handling requirements (example: a hotcut), inventory management,
5 and billing.

6

7 **4. Maintenance and Repair**

8 **Q. Please explain the maintenance and repair function.**

9 A. If a CLEC experiences problems with a UNE provisioned by Verizon VA,
10 Verizon VA will repair the UNE for the CLEC. Verizon also regularly
11 maintains the network.

12 **Q. What functions are involved in maintenance and repair?**

13 A. The functionalities involved in maintenance and repair include:

- 14 (1) Testing;
- 15 (2) Screening (analysis of the test results to determine whether there is a
16 valid problem, and, if so, where it is located);
- 17 (3) Creation of a trouble ticket;
- 18 (4) Dispatch of technicians;
- 19 (5) Status reporting;
- 20 (6) Close out of the trouble ticket (performing the repair); and
- 21 (7) Trouble history reporting.

**VERIZON VIRGINIA INC. PANEL TESTIMONY ON
UNBUNDLED NETWORK ELEMENTS AND
INTERCONNECTION COSTS**

1

2 **Q. What systems provide these functionalities?**

3 A. The systems utilized in the maintenance and repair process are:

4 **Loop Maintenance Operations System (LMOS)** – Mechanizes
5 maintenance center customer line card records. Its primary functions include
6 trouble report processing; control of automated testing; and analysis of past
7 trouble reports.

8 **WFA** – Creates trouble tickets; initiates a test if required; dispatches
9 technicians to the field or central office; maintains status on trouble tickets;
10 maintains a history log; and closes out trouble reports. WFA also manages
11 the dispatch of technicians for installation.

12 **Mechanized Loop Testing System (MLT)** – Tests POTS-type
13 services and switch ports and provides the results of the test for screening.

14 **DELPHI** – Further analyzes the MLT and React 2001 test results to
15 assist in trouble isolation.

16 **Star-Mem** – Allows automatic feature updates to switch when a
17 feature (such as Call Waiting or Call Forward) ordered by and billed to a
18 customer is not active on the customer's line.

19 **React 2001** – Provides for special services remote testing.